## EDMX - Materials science and Engineering 2017-18

### Core courses

<table>
<thead>
<tr>
<th>Courses</th>
<th>Exam</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Code</td>
<td>Section</td>
<td>Teacher</td>
</tr>
<tr>
<td>3D Electron Microscopy and FIB-Nanotomography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-704</td>
<td>EDMX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCMX Advanced Course - Additive Manufacturing of Polymeric Materials - 3D Camp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(From 4 Sept. 2017 to 6 Sept. 2017)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-661</td>
<td>EDMX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCMX Advanced Course - Advanced X-ray Diffraction Methods for Coatings: strain, defects and deformation analysis of thin films</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Next time: 27-29 novembre 2017 at Empa, Dübendorf)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-628</td>
<td>EDMX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCMX Advanced Course - Atomic Force Microscopy (AFM): Theory and Practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Postponed until further notice)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-624</td>
<td>EDMX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Next time 05 - 08 November, 2018)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-655</td>
<td>EDMX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCMX Advanced Course - From Additive Manufacturing to Field-assisted Sintering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(From 18.06.2018 to 20.06.2018)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-713</td>
<td>EDMX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCMX Advanced Course - Inorganic Particle Synthesis by Precipitation: From Nanoparticles to Self-organised Mesocrystals and from Theory to Practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Next time 19 - 21 March, 2018)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-653</td>
<td>EDMX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCMX Advanced Course - Instrumented Nanoindentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Next time 26 - 28 September, 2018)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-656</td>
<td>EDMX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCMX Summer School - Characterisation of Materials (2017)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Next time: 28 to 30 August 2017)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-805</td>
<td>EDMX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCMX Summer School - Multiscale Modelling of Materials (2016)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Registration closed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-802</td>
<td>EDMX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course Title</td>
<td>Provider Code</td>
<td>Provider</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>----------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>CCMX Winter School - Additive Manufacturing of Metals and the Material Science Behind It</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-657</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>CCMX Winter School - Metal Science</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-646</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>CCMX Winter School - Nanoparticles: From Fundamentals to Applications in Life Sciences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-632</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Characterization Methods in Materials Science</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-621</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Crystal growth by epitaxy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-649</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Crystallography of structural phase transformations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-651</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Design and analysis of experiments in materials science and engineering</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-629</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Effects of radiation on materials</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-600</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Electrochemistry in Corrosion Research</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-658</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Electron Microscopy for Life Science</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-638</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Laser Materials Processing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-662</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Limestone-Calcined Clay - Cement : Characterisation methods (2018)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-660</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Magnetic materials in modern technologies - from concepts to real devices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-650</td>
<td>EDMX</td>
</tr>
<tr>
<td><strong>Methods of Modelling and Simulation of Materials Science</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>MSE-641</td>
<td>EDMX</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Code</th>
<th>Type</th>
<th>Instructor(s)</th>
<th>Method</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modeling of advanced composites: processing and mechanical properties</td>
<td>MSE-710</td>
<td>EDMX</td>
<td>Multiple académiques(s) Michaud</td>
<td></td>
<td>Spring 2018</td>
</tr>
<tr>
<td>Nanofabrication with focused electron and ion beams</td>
<td>MSE-619</td>
<td>EDMX</td>
<td>Hoffmann Utke</td>
<td></td>
<td>Next time August 2017</td>
</tr>
<tr>
<td>Non-destructive evaluation methods</td>
<td>MSE-610</td>
<td>EDMX</td>
<td>Lüthi</td>
<td>Oral</td>
<td>2</td>
</tr>
<tr>
<td>Optical Materials: Fundamental concepts and recent developments</td>
<td>MSE-643</td>
<td>EDMX</td>
<td>Dasgupta Sorin</td>
<td>Oral</td>
<td>1</td>
</tr>
<tr>
<td>Piezoelectric materials, properties and devices</td>
<td>MSE-611</td>
<td>EDMX</td>
<td>Damjanovic</td>
<td>Written</td>
<td>1</td>
</tr>
<tr>
<td>Powder Characterisation and Dispersion</td>
<td>MSE-709</td>
<td>EDMX</td>
<td>Bowen</td>
<td>Written</td>
<td>1</td>
</tr>
<tr>
<td>Powder Diffraction School - Modern Synchrotron Methods</td>
<td>MSE-663</td>
<td>EDMX</td>
<td>Casati Various lecturers</td>
<td>Oral</td>
<td>2</td>
</tr>
<tr>
<td>PVLab School (Postponed until further notice)</td>
<td>MSE-711</td>
<td>EDMX</td>
<td>Balif Haug Würsch</td>
<td>Written</td>
<td>3</td>
</tr>
<tr>
<td>Scanning and Analytical Transmission Electron Microscopy</td>
<td>MSE-635</td>
<td>EDMX</td>
<td>Alexander Cantoni Deiana Hébert La Grange</td>
<td>Oral presentation</td>
<td>1</td>
</tr>
<tr>
<td>Scanning electron microscopy techniques (a)</td>
<td>MSE-636(a)</td>
<td>EDMX</td>
<td>Cantoni La Grange</td>
<td>Written</td>
<td>1</td>
</tr>
<tr>
<td>Scanning electron microscopy techniques (b)</td>
<td>MSE-636(b)</td>
<td>EDMX</td>
<td>Cantoni La Grange</td>
<td>Written</td>
<td>1</td>
</tr>
<tr>
<td>Science and technology of UV-induced polymerization</td>
<td>MSE-703</td>
<td>EDMX</td>
<td>Leterrier Nouzille Sangermano</td>
<td>Multiple</td>
<td>1</td>
</tr>
<tr>
<td>Statistical methods in atomistic computer simulations</td>
<td>MSE-639</td>
<td>EDMX</td>
<td>Ceriotti</td>
<td>Project report</td>
<td>2</td>
</tr>
<tr>
<td>Transmission electron microscopy and diffraction (a)</td>
<td>MSE-637(a)</td>
<td>EDMX</td>
<td>Alexander Deiana La Grange Laub</td>
<td>Written</td>
<td>1</td>
</tr>
<tr>
<td>Transmission electron microscopy and diffraction (b)</td>
<td>MSE-637(b)</td>
<td>EDMX</td>
<td>Alexander Deiana La Grange Laub</td>
<td>Written</td>
<td>1</td>
</tr>
</tbody>
</table>
### X-Ray Analysis for thin films
(Will be organized by the CCMX: 27 - 29 November, 2017 - at Empa, Dubendorf. Please find information on the following link: http://www.ccmx.ch/courses-and-events/news-single/article/262/31/ )

| E  | MSE-627 | EDMX | Dommann | Written | 2 |

### Other doctoral courses (EDOC) (.)

<table>
<thead>
<tr>
<th>Courses</th>
<th>Language Code</th>
<th>Section</th>
<th>Teacher</th>
<th>Exam</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenges and Opportunities in Energy Research</td>
<td>E</td>
<td>ChE-803</td>
<td>EDCH</td>
<td>Various lecturers</td>
<td>Written &amp; Oral</td>
</tr>
</tbody>
</table>

### Master courses (.)

<table>
<thead>
<tr>
<th>Courses</th>
<th>Language Code</th>
<th>Section</th>
<th>Teacher</th>
<th>Exam</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar series on advances in materials (autumn)</td>
<td>E</td>
<td>MSE-470(a)</td>
<td>MX</td>
<td>Amstad, Tileli</td>
<td>Written</td>
</tr>
<tr>
<td>Seminar series on advances in materials (spring)</td>
<td>E</td>
<td>MSE-470(b)</td>
<td>MX</td>
<td>Amstad, Tileli</td>
<td>Written</td>
</tr>
</tbody>
</table>